

AMENDMENTS TO THE SPECIFICATION

Please AMEND the claims as indicated below:

LISTING OF CLAIMS

1. (Currently amended) ~~A Layer~~ layer (2'''), which can be arranged on an implant (1) for bone or tissue structure (5), ~~and which~~ that constitutes a boundary or barrier between the body of the ~~implant and the structure~~ for the purpose of increasing retention and ~~which has, in this context, a~~ substantial thickness (T), ~~characterized in that the~~ said layer (2''') further comprising:

~~is designed with a channel network (6) which~~ that gives the layer a substantial porosity, ~~and in that~~ wherein the channel network (6) is designed with mouths (3, 4) which face towards a surface of the layer and ~~the structure and~~ whose respective cross-sectional diameters (D) ~~[[,]]~~ at the surface (2a') of the layer ~~facing towards the structure (5)~~ are substantially less than the respective extents (H) of the channels in and down into the layer as seen from ~~the~~ said surface (2a').

2. (Currently amended)) ~~Implant layer according to Patent Claim 1, characterized in that~~ The layer according to claim 1, wherein the channel network (6) comprises contiguous channel branches (12, 13, 14, 15) which extend through at least ~~the~~ a greater part of the layer (2''') from ~~the~~ said surface (2a') and to ~~the~~ a transition (11) from the layer to ~~the body (1'')~~ of the implant.

3. (Currently amended) ~~Implant layer according to Patent Claim 1, characterized in that~~ The layer according to claim 1, wherein the channel network (6) has channel branches (10) which extend in directions which are different than ~~the~~ a depth direction of the layer or ~~the~~ a radial direction of the implant.

4. (Currently amended)) ~~Implant layer according to Patent Claim 1, characterized in that it~~ The layer according to claim 1, wherein the layer is established on an undulating or uneven surface (3') present on the implant ~~from the start and having a high roughness value, for example in the~~ range of 0.4 - 5 μ m, for the purpose of increasing the layer volume.

5. (Currently amended)) ~~Implant layer according to Patent Claim 1, characterized in that it~~ The layer according to claim 1, wherein the layer has a thickness (T) which give a substantial corrosion resistance for the implant as a whole.
6. (Currently amended)) ~~Implant layer according to Patent Claim 1, characterized in that The~~ layer according to claim 1, wherein the channel network (6) is arranged with a mouth arrangement (3', 4') towards the bone or tissue structure (5), permitting increased bone growth penetration into the channel at the said mouths (compared to conventional oxide layers).
7. -(Currently amended)) ~~Implant layer according to Patent Claim 1, characterized in that The~~ layer according to claim 1, wherein the layer has an average thickness in the range of 0.5 – 20 μm , preferably in the range of 2 – 20 μm .
8. (Currently amended) ~~Implant layer according to Patent Claim 1, characterized in that The~~ layer according to claim 1, wherein the oxide layer has a surface roughness, at its outer surface, in the range of 0.4 – 5 μm .
9. (Currently amended) ~~Implant layer according to Patent Claim 1, characterized in that The~~ layer according to claim 1, wherein the oxide layer has a high degree of porosity, with a number $1 \times 10^7 - 1 \times 10^{10}$ pores/cm³.
10. (Currently amended) ~~Implant layer according to Patent Claim 1, characterized in that The~~ layer according to claim 1, wherein the each surface has pores or channel mouth areas with diameters or surface area sizes in the range of 0.1 – 10 μm , and or in that the total channel network or pore volume lies in a range of 5×10^{-2} and 10^{-5} cm³.
11. (Currently amended)) ~~Implant layer according to Patent Claim 1, characterized in that The~~ layer according to claim 1, wherein the layer consists of or comprises a titanium oxide layer.
12. (Currently amended) ~~Implant layer according to Patent Claim 1, characterized in that The~~ layer according to claim 1, wherein the implant consists of a screw implant for application in the a jaw bone.

13. (Currently amended) ~~Implant layer according to Patent Claim 1, characterized in that~~ The layer according to claim 1, wherein the layer forms a depot for applied bone-growth-initiating or bone-growth-stimulating agent or substance (17).

14. (Currently amended) ~~Implant layer according to Patent Claim 1, characterized in that~~ The layer according to claim 1, wherein ~~the~~ an agent or the substance migrates from ~~the~~ a depot to the bone or tissue structure (5) by means of concentration diffusion.

15. (Currently amended) An ~~Implant~~ implant (1) for bone or tissue structure (5) ~~and~~ comprising:

one or more layers (2) which constitute a boundary (or boundaries) ~~between the body (1) of the implant and the structure (5)~~ for the purpose of increasing retention and ~~which each layer has have, in this context,~~ a substantial thickness, ~~characterized in that each layer further~~ comprising:

~~designed with~~ a channel network (6) which give the layer (2) a substantial porosity, ~~and in that wherein the channel network (6) is designed with mouths (3, 4) which face towards~~ a surface of the layer and the structure and whose respective cross-sectional diameters (D)[[,]] at ~~the~~ a surface of the layer ~~facing towards the structure,~~ are substantially less than the respective extents (H) of the channels in and down into the layer as seen from ~~the~~ said surface (2a').

16. (Withdrawn) Method for producing, by anodic oxidation, on an implant comprising or consisting of titanium, relatively thick oxide layers (2) on one or more titanium surfaces which are intended to be placed against or arranged next to one or more tissue and/or bone growth areas (5), where at least the part or parts supporting the said surface or surfaces are prepared and immersed in electrolyte (26) and the implant is brought into contact with an electrical energy source above the electrolyte surface and the oxidation process is established by also connected to the energy source a counter-electrode arranged in the electrolyte (26), characterized in that diluted organic acids and/or small quantities of hydrofluoric acids or hydrogen peroxide are added to the electrolytic composition, and in that the energy source is chosen to operate with

voltage values of at least 150 volts, for example with voltage values in the range of 200 – 400 volts.

17. (Withdrawn) Method according to Patent Claim 12, characterized in that the voltage (28) is varied at times for the same implant in order to create different channel or pore sizes within the same surface area.

18. (Withdrawn) Method according to Patent Claim 16, characterized in that the position of the implant in the electrolyte is changed together with the composition of the electrolyte (26) and/or the voltage (28) in order to create different oxide thicknesses (T, T') and/or areas of different porosity or pore or channel characteristics.

19. (Currently amended) ~~Implant layer according to Patent Claim 2, characterized in that~~ The layer of claim 2, wherein the channel network (6) has channel branches (10) which extend in directions which are different than ~~the a~~ a depth direction of the layer of ~~the a~~ a radial direction of the implant.

20. (Currently amended) ~~Implant layer according to Patent Claim 2, characterized in that it~~ The layer of claim 2, wherein the layer is established on an undulating or uneven surface (3') present on the implant ~~from the start and having a high roughness value, for example~~ in the range of 0.4 – 5 μm , for the purpose of increasing ~~the~~ layer volume.

21. (New) The layer according to claim 1, wherein the layer has an average thickness in the range of 2 -20 μm .